09/242,343

	L #	Hits	Search Text	DBs	Time Stamp
1	L1	550	514/16.ccls.	USPAT	2000/06/15 14:31
2	L2	0	pumilacidin	USPAT	2000/06/15 14:31
3	L3	45	surfactin	USPAT	2000/06/15 14:31
4	L4	738	cyclic adj (peptide or heptapeptide)	USPAT	2000/06/15 14:32
5	L5	19	cyclic adj lipopeptide	USPAT	2000/06/15 14:32
6	L6	795	2 or 3 or 4 or 5	USPAT	2000/06/15 14:32
7	L7	56	1 and 6	USPAT	2000/06/15 14:33
8	L8	35463	virus or viral	USPAT	2000/06/15 14:33
9	L9	24	7 and 8	USPAT	2000/06/15 14:38
10	L10	19	3 and 8	USPAT	2000/06/15 14:38

20/3,AB/3 (Item 3 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

08462373 96025725
[Study on surfactin, a cyclic depsipeptide. I. Isolation and structure of eight surfuctin analogs produced by Bacillus natto KMD 2311]
Kanatomo S; Nagai S; Ohki K; Yasuda Y
Faculty of Pharmaceutical Sciences, Hokuriku University, Kanazawa, Japan.
Yakugaku zasshi (JAPAN) Sep 1995, 115 (9) p756-64, ISSN 0031-6903
Journal Code: JON
Languages: JAPANESE Summary Languages: ENGLISH
Document type: JOURNAL ARTICLE English Abstract
Crude surfactin was simply prepared from the culture filtrate of Bacillus natto KMD 2311 twice by acidification of the filtrate and extraction of the precipitate with ethanol. Eight surfactin analogs were isolated from the crude surfactin by RP-HPLC and gel filtration. The structure of each analog was deduced by means of amino acid composition of the acid hydrolysate and FAB-MS measurement to be a cyclic depsipeptide containing a hydroxyfatty acid. The structure of the hydroxyfatty acid moieties was elucidated as n- or iso- or anteiso-3-hydroxyfatty acid composed of carbon number 13-16 by GC analysis and EI-MS after the methanolysis of the analogs. The amino acid sequence of the peptide portion was assigned as acyl-Glu-Leu-Leu-Val-Asp-Leu-Leu by EI-MS for eight analogs. The isolated four compounds were found to be identical with the known surfactin analogs, A1, B1, B2 and C1. Although surfactin A2 and C2 had not been isolated, their **structures** were deduced to be a **surfactin** analog. Surfactin A3 and D were novel analogs. The acyl groups of surfactin A2, A3, C2 and D were anteiso-3-hydroxytridecanoic acid, n-3-hydroxytridecanoic acid, anteiso-3-hydroxypentadecanoic acid and iso-3-hydroxyhexadecanoic acid, respectively.

20/3,AB/5 (Item 5 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

08186451 94357236
[Ala4]surfactin, a novel isoform from Bacillus subtilis studied by mass and NMR spectroscopies.
Peypoux F; Bonmatin JM; Labbe H; Grangemard I; Das BC; Ptak M; Wallach J; Michel G
Laboratoire de Biochimie Microbienne, Universite Claude Bernard Lyon 1, France.
European journal of biochemistry (GERMANY) Aug 15 1994, 224 (1) p89-96, ISSN 0014-2956 Journal Code: EMZ
Languages: ENGLISH
Document type: JOURNAL ARTICLE
When Bacillus subtilis S 499 was grown on a culture medium containing L-alanine as nitrogen source, a mixture of surfactins was obtained. Suitable chromatographic conditions allowed the separation of isoforms. Among these compounds, a new variant of **surfactin** was isolated and its **structure** was established by chemical and spectrometric methods, especially by NMR spectrometry. It contains a peptide sequence which differs from that of standard surfactin by the replacement of the L-valine residue by L-alanine residue in position 4. The folding mode of [Ala4]surfactin as deduced from NMR results was compared with that of standard **surfactin** and the **structure** /properties relationship issuing from the study of this new isoform is discussed.

20/3,AB/10 (Item 3 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10584127 BIOSIS NO.: 199699205272
Production, isolation and characterization of (Leu-4)- and (Ile-4) surfactins from Bacillus subtilis.
AUTHOR: Bonmatin Jean-Marc(a); Labbe Henri; Grangemard Isabelle; Peypoux Francoise; Maget-Dana Regine; Ptak Marius; Michel Georges
AUTHOR ADDRESS: (a)Cent. Biophys. Mol., Univ. Orleans, F-45071 Orleans** France
JOURNAL: Letters in Peptide Science 2 (1):p41-47 1995
ISSN: 0929-5666
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Bacillus subtilis coproduces several surfactin variants that are powerful biosurfactants and have potential applications in biology and industry. A single amino acid substitution in the heptapeptide moiety of surfactins strongly modifies their properties. To better establish structure-activity relationships and to search new variants with enhanced properties, Bacillus subtilis was grown into two modified culture media. Two new variants were isolated by chromatographic methods and studied by NMR spectroscopy. As planned, modifications consisted in the substitution of the L-valine residue at the fourth position by a more hydrophobic residue, i.e., leucine or isoleucine. These (Leu-4)- and (Ile-4)surfactins have a higher affinity for hydrophobic solvents and a twice improved surfactant power. Structure-property correlations were confirmed by analysis of the hydrophobic residue distribution in the three-dimensional model of the **structure** of **surfactin** in solution.

20/3,AB/14 (Item 7 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

09493979 BIOSIS NO.: 199497502349
(Ala4)Surfactin, a novel isoform from Bacillus subtilis studied by mass and NMR spectroscopies.
AUTHOR: Peypoux Francoise(a); Bonmatin Jean-Marc; Labbe Henri; Grangemard Isabelle; Das Bhupesh C; Ptak Marius; Wallach Jean; Michel Georges
AUTHOR ADDRESS: (a)Laboatorie de Biochimie Microbienne, Universite Claude Bernard Lyon 1, 43 Boulevard du 11 Novemb**France
JOURNAL: European Journal of Biochemistry 224 (1):p89-96 1994
ISSN: 0014-2956
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: When Bacillus subtilis S 499 was grown on a culture medium containing L-alanine as nitrogen source, a mixture of surfactins was obtained. Suitable chromatographic conditions allowed the separation of isoforms. Among these compounds, a new variant of **surfactin** was isolated and its **structure** was established by chemical and spectrometric methods, especially by NMR spectrometry. It contains a peptide sequence which differs from that of standard surfactin by the replacement of the L-valine residue by L-alanine residue in position 4. The folding mode of (Ala4)surfactin as deduced from NMR results was compared with that of standard **surfactin** and the **structure** /properties

relationship issuing from the study of this new isoform is discussed.

20/3,AB/24 (Item 3 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

06957221 Genuine Article#: 108JN Number of References: 39
Title: Separation and characterization of surfactin isoforms produced by Bacillus subtilis OKB 105
Author(s): Kowall M; Vater J; Kluge B; Stein T; Franke P; Ziessow D (REPRINT)
Corporate Source: TECH UNIV BERLIN,IWAN N STRANSKI INST PHYS & THEORET CHEM, STR 17 JUNI 112/D-10623 BERLIN//GERMANY/ (REPRINT); TECH UNIV BERLIN,IWAN N STRANSKI INST PHYS & THEORET CHEM/D-10623 BERLIN//GERMANY/; TECH UNIV BERLIN,FACHGEBIET BIOCHEM & MOL BIOL, MAX VOLMER INST BIOPHYS & PHYS CHEM/D-10587 BERLIN//GERMANY/; FREI UNIV BERLIN,INST BIOCHEM/D-14195 BERLIN//GERMANY/
Journal: JOURNAL OF COLLOID AND INTERFACE SCIENCE, 1998, V204, N1 (AUG 1), P1-8
ISSN: 0021-9797 Publication date: 19980801
Publisher: ACADEMIC PRESS INC JNL-COMP SUBSCRIPTIONS, 525 B ST, STE 1900, SAN DIEGO, CA 92101-4495
Language: English Document Type: ARTICLE
Abstract: Natural surfactin is a mixture of cyclic lipopeptides built from variants of a heptapeptide and a beta-hydroxy fatty acid with chain lengths of 13-15 carbon atoms. The lipopeptide biosurfactant was produced by Bacillus subtilis OKB 105 and part of the material subjected to esterification of its Glu and Asp residues. High-resolution preparative reversed phase HPLC on EnCaPharm 100 of surfactin and its monomethyl and dimethyl esters yielded 44 fractions which were characterized by NMR and MS methods. Among the separated isoforms are the known surfactin variants with L-Leu, L-Val, or L-Ile in position 7 of the peptide ring and three hitherto unknown variants showing replacements of the leucine residues in position 2 and/or 7 by L-Val and L-Ile, Our work makes available lipoheptapeptide compounds with modified structures and different hydrophobicities which promise to have potential for biotechnological and pharmaceutical applications. (C) 1998 Academic Press.

20/3,AB/29 (Item 8 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

04440893 Genuine Article#: TD275 Number of References: 21
Title: PRODUCTION, ISOLATION AND CHARACTERIZATION OF [LEU(4)]SURFACTINS AND [ILE(4)]SURFACTINS FROM BACILLUS-SUBTILIS
Author(s): BONMATIN JM; LABBE H; GRANGEMARD I; PEYPOUX F; MAGETDANA R; PTAK M; MICHEL G
Corporate Source: CNRS,CTR BIOPHYS MOLEC/F-45071 ORLEANS//FRANCE/; UNIV ORLEANS/F-45071 ORLEANS//FRANCE/; UNIV LYON 1,BIOCHIM ANALYT & SYNTHESE BIOORGAN LAB/F-69622 VILLEURBANNE//FRANCE/; UNIV LYON 1,BIOCHIM MICROBIENNE LAB/F-69622 VILLEURBANNE//FRANCE/
Journal: LETTERS IN PEPTIDE SCIENCE, 1995, V2, N1 (AUG), P41-47
ISSN: 0929-5666
Language: ENGLISH Document Type: ARTICLE
Abstract: Bacillus subtilis coproduces several surfactin variants that are powerful biosurfactants and have potential applications in biology and industry. A single amino acid substitution in the heptapeptide moiety of surfactins strongly modifies their properties. To better establish

structure-activity relationships and to search new variants with enhanced properties, Bacillus subtilis was grown into two modified culture media. Two new variants were isolated by chromatographic methods and studied by NMR spectroscopy. As planned, modifications consisted in the substitution of the L-valine residue at the fourth position by a more hydrophobic residue, i.e., leucine or isoleucine. These [Leu(4)]- and [Ile(4)]surfactins have a higher affinity for hydrophobic solvents and a twice improved surfactant power. Structure-property correlations were confirmed by analysis of the hydrophobic residue distribution in the three-dimensional model of the **structure** of **surfactin** in solution.

20/3,AB/30 (Item 9 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

04351726 Genuine Article#: RX538 Number of References: 15
Title: STUDY ON SURFACTIN, A CYCLIC DEPSIPEPTIDE .1. ISOLATION AND STRUCTURE **OF 8** SURFACTIN **ANALOGS PRODUCED BY BACILLUS-NATTO KMD-2311**
Author(s): KANATOMO S; NAGAI S; OHKI K; YASUDA Y
Corporate Source: HOKURIKU UNIV,FAC PHARMACEUT SCI,HO 3/KANAZAWA/ISHIKAWA 92011/JAPAN/; HOKURIKU UNIV,FAC PHARMACEUT SCI/KANAZAWA/ISHIKAWA 92011/JAPAN/
Journal: YAKUGAKU ZASSHI-JOURNAL OF THE PHARMACEUTICAL SOCIETY OF JAPAN, 1995, V115, N9 (SEP), P756-764
ISSN: 0031-6903
Language: JAPANESE Document Type: ARTICLE
Abstract: Crude surfactin was simply prepared from the culture filtrate of Bacillus natto KMD 2311 twice by acidification of the filtrate and extraction of the precipitate with ethanol. Eight surfactin analogs were isolated from the crude surfactin by RP-HPLC and gel filtration. The structure of each analog was deduced by means of amino acid composition of the acid hydrolysate and FAR-MS measurement to be a cyclic depsipeptide containing a hydroxyfatty acid. The structure of the hydroxyfatty acid moieties was elucidated as n- or iso-or anteiso-3-hydroxyfatty acid composed of carbon number 13-16 by GC analysis and EI-MS after the methanolysis of the analogs. The amino acid sequence of the peptide portion was assigned as acyl-Glu-Leu-Leu-Val-Asp-Leu-Leu by EI-MS for eight analogs. The isolated four compounds were found to be identical with the known surfactin analogs, A(1), B-1, B-2 and C-1. Although surfactin A(2) and C-2 had not been isolated, their **structures** were deduced to be a **surfactin** analog. Surfactin A(3) and D were novel analogs. The acyl groups of surfactin A(2), A(3), C-2 and D were anteiso-3-hydroxytridecanoic acid, n-3-hydroxytridecanoic acid, anteiso-3-hydroxypentadecanoic acid and iso-3-hydroxyhexadecanoic acid, respectively.

20/3,AB/31 (Item 10 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

04275837 Genuine Article#: RT329 Number of References: 20
Title: SURFACTIN-**LIKE** STRUCTURES **OF 5 CYCLIC DEPSIPEPTIDES FROM THE MARINE ISOLATE OF BACILLUS-PUMILUS**
Author(s): KALINOVSKAYA NI; KUZNETSOVA TA; RASHKES YV; MILGROM YM; MILGROM EG; WILLIS RH; WOOD AI; KURTZ HA; CARABEDIAN C; MURPHY P; ELYAKOV GB
Corporate Source: RUSSIAN ACAD SCI,PACIFIC INST BIOORGAN CHEM,159PROSP 100 LETIYA VLADIVOSTOKA/VLADIVOSTOK 690022//RUSSIA/; RUSSIAN ACAD

SCI,PACIFIC INST BIOORGAN CHEM/VLADIVOSTOK 690022//RUSSIA/; UZBEK ACAD SCI,INST CHEM PLANT SOURCES/TASHKENT700170//UZBEKISTAN/; AUSTRALIAN INST MARINE SCI/TOWNSVILLE/QLD 4810/AUSTRALIA/; UNIV PUGET SOUND,DEPT CHEM/TACOMA//WA/98416

Journal: RUSSIAN CHEMICAL BULLETIN, 1995, V44, N5 (MAY), P951-955
ISSN: 1066-5285
Language: ENGLISH Document Type: ARTICLE

Abstract: Five cyclic depsipeptides with molecular masses of 1007, 1021, 1021, 1035, and 1035 were obtained from Bacillus pumilus KMM 150 associated with Australian marine sponge Ircinia sp. Their structures were assigned by mass spectrometric techniques (high-resolution fast atom bombardment and electron impact mass spectrometry), chemical modification, and extensive spectroscopic analysis, including several types of two-dimensional NMR.

20/3,AB/49 (Item 6 from file: 76)

01563826 2690350

Cell-free biosynthesis of surfactin, a cyclic lipopeptide produced by Bacillus subtilis .

Ullrich, C.; Kluge, B.; Palacz, Z.; Vater, J.
Inst. Biochem. und Mol. Biol. Tech. Univ. Berlin, Franklinstr. 29, D-1000 Berlin 10, FRG

BIOCHEMISTRY (WASH.). vol. 30, no. 26, pp. 6503-6508 (1991.)
DOCUMENT TYPE: Journal article LANGUAGE: ENGLISH
SUBFILE: Biochemistry Abstracts Part 3: Amino Acids, Peptides and Proteins; Microbiology Abstracts Section B: Bacteriology

Biosynthesis of surfactin was studied in a cell-free system prepared from B. subtilis ATCC 21332 and OKB 105, which is a transformant producing **surfactin** in high yield. The **structure** of **surfactin** , synthesized enzymatically in vitro, was confirmed by chromatographic comparison with the authentic compound and by amino acid analyses.

20/3,AB/52 (Item 3 from file: 94)

02618387 JICST ACCESSION NUMBER: 95A0866502 FILE SEGMENT: JICST-E

Study on Surfactin, a Cyclic Depsipeptide. I. Isolation and Structure of Eight Surfuctin Analogs Produced by Bacillus natto KMD 2311.

KANETOMO SHOICHI (1); NAGAI SOTOO (1); OKI KAZUHIRO (1); YASUDA(HAMAOKA) YUKA (1)
(1) Hokuriku Univ., Fac. of Pharm. Sci.

Yakugaku Zasshi(Journal of the Pharmaceutical Society of Japan), 1995, VOL.115,NO.9, PAGE.756-764, FIG.5, TBL.4, REF.9
JOURNAL NUMBER: F0508AAY ISSN NO: 0031-6903 CODEN: YKKZA
UNIVERSAL DECIMAL CLASSIFICATION: 547.466.1 547.915/.916+547.95/.99
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication

ABSTRACT: Crude surfactin was simply prepared from the culture filtrate of Bacillus natto KMD 2311 twice by acidification of the filtrate and extraction of theprecipitate with ethanol. Eight surfactin analogs were isolated from the crude surfactin by RP-HPLC and gel filtration. The structure of each analog was deduced by means of amino acid composition

of the acid hydrolysate and FAB-MS measurement to be a cyclic depsipeptide containing a hydroxyfatty acid. The structure of the hydroxyfatty acid moieties was elucidated as n- or iso- or anteiso-3-hydroxyfatty acid composed of carbon number 13-16 by GC analysis and EI-MS after the methanolysis of the analogs. The amino acid sequence of the peptide portion was assigned as acyl-Glu-Leu-Leu-Val-Asp-Leu-Leu by EI-MS for eight analogs. The isolated four compounds were found to be identical with the known surfactin analogs, A1, B1, B2 and C1. Although surfactin A2 and C2 had not been isolated, their **structures** were deduced to be a **surfactin** analog. Surfactin A3 and D were novel analogs. The acyl groups of surfactin A2, A3, C2 and D were anteiso-3-hydroxytridecanoic acid, n-3-hydroxytridecanoic acid, anteiso-3-hydroxypentadecanoic acid and iso-3-hydroxyhexadecanoic acid, respectively. (author abst.)

?

Set	Items	Description
S1	3270	L(W)GLU
S2	9844	L(W)ILE
S3	2952	L(W)VAL
S4	3817	D(W)LEU
S5	2952	L(W)VAL
S6	5511	L(W)ALA
S7	2760	L(W)ASP
S8	3817	D(W)LEU
S9	5609	L(W)LEU
S10	9844	L(W)ILE
S11	2952	L(W)VAL
S12	12049	S2 OR S3
S13	7383	S5 OR S6
S14	12049	S10 OR S11
S15	1	S1(W)S12(W)S4(W)S13(W)S7(W)S8(W)(S9 OR S10 OR S11)
S16	1295	SURFACTIN? ? OR PUMILACIDIN? ?
S17	8310182	STRUCTURE? ?
S18	1283	SURFACTIN? ?
S19	252	S17(S)S18
S20	91	S17(5N)S18
S21	1945377	MIXTURE

?